

Attorney Docket No. P13364

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A method ~~[[for]]~~ of decoding a compressed video bit stream corresponding to a compressed video signal having a first resolution to a video signal having a second resolution lower than the first resolution, said method comprising:

downscaling the compressed video bit stream, said downscaling step including removing transform components; and

thereafter, decoding the downscaled compressed video bit stream to provide said video signal having said second resolution.

2. (Original) The method according to claim 1 wherein said downscaling step comprises removing high frequency components of the compressed video bit stream.

3. (Original) The method of claim 2 wherein said bit stream uses blocks of a given size, and wherein said step of removing high frequency components provides a bit stream having a modified block size smaller than said given size.

4. (Original) The method of claim 3 wherein said given block size is 8*8 DCT and wherein said modified block size is k*k, where $k < 8$.

5. (Original) The method according to claim 1 wherein said first resolution is CIF (352*288) and said second resolution is QCIF (176*144).

6. (Currently Amended) The method according to claim 1, ~~and further including~~ further comprising the step of using said video signal having said second resolution to display an image on a display unit at said second resolution.

Amendment - PAGE 2 of 11
EUS/J/P/04-8761

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Attorney Docket No. P13364

7. (Currently Amended) A method ~~[[for]]~~ of processing a compressed video bit stream corresponding to a compressed video signal having a first resolution to provide a video signal having a second resolution lower than said first resolution for use by a display unit having said second resolution, said method comprising:

downscaling the compressed video bit stream, said downscaling step including removing transform components;

decoding the downscaled compressed video bit stream using modified prediction to provide said video signal having said second resolution; and

using said video signal having said second resolution to display an image on said display unit at said second resolution.

8. (Original) The method according to claim 7, wherein said bit stream uses blocks of a given size, and wherein said downscaling step provides a bit stream having a modified block size smaller than said given size.

9. (Original) The method according to claim 8, wherein said given block size is 8×8 DCT and wherein said modified block size is $k \times k$, where $k < 8$.

10. (Currently Amended) The method according to claim 7, wherein said step of decoding using modified prediction ~~further~~ includes the steps of:

scaling a motion vector;

if said motion vector is full-pel, using spline-interpolating filters for scaling motion compensation;

if said motion vector is half-pel and $k=7$, using bilinear blur for scaling motion compensation;

if said motion vector is half-pel in the horizontal and vertical direction and $k=6$, using bilinear blur for scaling motion compensation; and

if said motion vector is half-pel and $k < 6$, using 4-tap filters with limited blur for scaling motion compensation, wherein said modified block size is $k \times k$, where $k < 8$.

Attorney Docket No. P13364

11. (Currently Amended) An apparatus for decoding a compressed video bit stream corresponding to a compressed video signal having a first resolution to a video signal having a second resolution lower than the first resolution, said apparatus comprising signal processing circuitry which that downscales the compressed video bit stream to remove transform components, and, thereafter, decodes the downsampled compressed video bit stream to provide said video signal having said second resolution.

12. (Currently Amended) The apparatus of claim 11, wherein said signal processing circuitry further comprises:

means for modifying the block size of the bitstream from a given size to a modified block size smaller than said given size;

means for discarding high frequency ~~discrete cosine transform~~ components;

means for multiplying the modified block of the bitstream with a modified inverse transform matrix; and

means for using a modified prediction process so as to reduce mismatch degradation.

13. (Currently Amended) A method for decoding a compressed video bit stream corresponding to a compressed video signal having a first resolution to a video signal having a second resolution equal to or higher than the first resolution, said method comprising:

decoding the compressed video bit stream using modified prediction, said decoding step including the steps of:

scaling a motion vector;

if said motion vector is full-pel, using spline-interpolating filters for scaling motion compensation;

if said motion vector is half-pel and $k=7$, using bilinear blur for scaling motion compensation;

if said motion vector is half-pel in the horizontal and vertical direction and $k=6$, using bilinear blur for scaling motion compensation; and

Attorney Docket No. P13364

if said motion vector is half-pel and $k \leq 6$, using 4-tap filters with limited blur for scaling motion compensation; and

using said video signal to display an image on a portion of a display unit having said second resolution.

14. (Original) The method according to claim 13, wherein said bit stream uses blocks of a given size, and wherein said decoding step is provided a bit stream having a modified block size smaller than said given size.

15. (Original) The method according to claim 14, wherein said given block size is 8×8 DCT and wherein said modified block size is $k \times k$, where $k \leq 8$.

16-17. (Canceled)

18. (Currently Amended) ~~The apparatus of claim 17,~~ An apparatus for decoding a compressed video bit stream corresponding to a compressed video signal having a first resolution to a video signal having a second resolution equal to or higher than the first resolution, said apparatus comprising signal processing circuitry that decodes the compressed video bit stream to provide the video signal to a display unit, wherein said signal processing circuitry further comprises comprising:

- means for modifying the block size of the bitstream;
- means for discarding high frequency discrete cosine transform components;
- means for multiplying the modified block of the bitstream with a modified inverse transform matrix; and
- means for using a modified prediction process so as to reduce mismatch degradation.

19. (New) The method of claim 1 wherein the transform components are discrete cosine transform (DCT) components.

Attorney Docket No. P13364

20. (New) The method of claim 1 wherein MPEG video format provides at least one of the first resolution and the second resolution.

21. (New) The method of claim 1 wherein PGA video format provides at least one of the first resolution and the second resolution.

22. (New) The method of claim 7 wherein the transform components are discrete cosine transform (DCT) components.

23. (New) The method of claim 7 wherein MPEG video format provides at least one of the first resolution and the second resolution.

24. (New) The method of claim 7 wherein PGA video format provides at least one of the first resolution and the second resolution.

25. (New) The apparatus of claim 11 wherein the transform components are discrete cosine transform (DCT) components.

26. (New) The apparatus of claim 11 wherein MPEG video format provides at least one of the first resolution and the second resolution.

27. (New) The apparatus of claim 11 wherein PGA video format provides at least one of the first resolution and the second resolution.

28. (New) The method of claim 13 wherein MPEG video format provides at least one of the first resolution and the second resolution.

29. (New) The method of claim 13 wherein PGA video format provides at least one of the first resolution and the second resolution.